

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) An oral phototherapy apparatus comprising:
a body sized and shaped so as to fit at least partially in a user's mouth; ~~and~~
at least one radiation emitter coupled to the body to irradiate a portion of the oral cavity
with phototherapeutic radiation in at least two separate spectral bands; and
one or more bristles optically coupled to the at least one radiation emitter to receive and
propagate the phototherapeutic radiation therefrom.
2. (Original) The apparatus of claim 1 wherein the emitter further comprises at least one source
of radiation having wavelength components in at least two separate spectral bands.
3. (Original) The apparatus of claim 1 wherein the emitter further comprises at least two
sources of radiation emitting different spectral bands of radiation.
4. (Original) The apparatus of claim 1 wherein the emitter further comprises at least one
radiation source selected from the group of light-emitting diodes, superluminescent diodes, laser
diodes, vertical cavity surface emitting lasers, fiber lasers, fluorescent solid-state sources, and
lamps.
5. (Original) The apparatus of claim 1 wherein the apparatus further comprises an optical filter
for selecting a spectral band of radiation for use in phototherapy.
6. (Original) The apparatus of claim 1 wherein the apparatus further comprises a plurality of
optical filters for selecting a plurality of spectral bands of radiation for use in phototherapy.
7. (Original) The apparatus of claim 1 wherein the spectral bands overlap.
8. (Original) The apparatus of claim 1 wherein the spectral bands do not overlap.

9. (Original) The apparatus of claim 1 wherein the apparatus further comprises an optical element for directing radiation in different directions.

10. (Original) The apparatus of claim 9 wherein the apparatus is configured to direct radiation to at least one portion of the oral cavity selected from the group of a tooth, cheek, tongue, palate, throat and facial tissue, lymphatic tissue, blood, gland, follicle, collagen and pigmentation.

11. (Cancelled)

12. (Currently amended) The apparatus of ~~claim 11~~ claim 1 wherein the bristles are substantially transparent to phototherapeutic radiation within at least one wavelength range.

13. (Cancelled)

14. (Currently amended) The apparatus of claim 1 ~~claim 11~~ wherein the apparatus further ~~comprise~~ comprises a scattering agent to diffuse the radiation.

15. (Currently amended) The apparatus of claim 1 ~~claim 11~~ wherein the bristles are at least partially coated with a reflective material.

16. (Currently amended) The apparatus of claim 1 ~~claim 11~~ wherein the bristles are shaped to control light distribution.

17. (Previously Presented) The apparatus of claim 16 wherein the bristles have at least one shape, relative to an elongated direction of the bristles, selected from the group of conical, tapered, curved and spiral shapes.

18. (Currently amended) The apparatus of claim 1 ~~claim 11~~ wherein the bristles are shaped to transmit radiation.

19. (Previously Presented) The apparatus of claim 18 wherein the bristles have at least one shape, relative to an elongated direction of the bristles, selected from the group of conical, tapered, curved and spiral shapes.

20. (Currently amended) The apparatus of claim 1 ~~claim 11~~ wherein the bristles further comprise at least one element selected from the group of fluorescent, luminescent or lasing elements.

21. (Currently amended) The apparatus of claim 1 ~~claim 11~~ wherein the bristles are incorporated into a brush head, which is removable and replaceable.

22. (Currently amended) The apparatus of claim 1 ~~claim 11~~ wherein the at least one radiation emitting elements comprises two or more radiation emitting elements; and _____ wherein the bristles are ~~optically transmissive and coupled to at least one of the at least one~~ fewer than all of the radiation emitting elements ~~to receive and transmit radiation~~.

23. (Currently amended) The apparatus of claim 1 ~~claim 22~~ wherein the light refractive characteristics of the ~~optically transmissive~~ bristles are selected to inhibit light transmission to the oral cavity in the absence of contact between the bristle and a surface of the teeth or cavity.

24. (Currently Amended) ~~The apparatus of claim 1 wherein the apparatus further comprises~~
An oral phototherapy apparatus comprising:
_____ a body sized and shaped so as to fit at least partially in a user's mouth;
_____ at least one radiation emitter coupled to the body to irradiate a portion of the oral cavity
with phototherapeutic radiation in at least two separate spectral bands; and
_____ a motion sensor and controller which controls the radiation emitter based on signals from the motion sensor.

25. (Original) The apparatus of claim 1 wherein the apparatus further comprises a contact sensor and controller which controls the radiation emitter based on signals from the contact sensor.

26. (Currently Amended) The apparatus of claim 1 wherein the apparatus further comprises [an] a diagnostic sensor and controller which controls the radiation emitter based on signals from the diagnostic sensor.
27. (Original) The apparatus of claim 1 wherein the apparatus further comprises at least one thermally conductive element for extracting heat from the emitter.
28. (Original) The apparatus of claim 27 wherein the thermally conductive element comprises a fluid heat transfer medium.
29. (Original) The apparatus of claim 27 wherein the apparatus further comprises a handle that serves as a heat sink.
30. (Original) The apparatus of claim 27 wherein the thermally conductive element comprises a phase change material.
31. (Original) The apparatus of claim 27 wherein the apparatus further comprises a heat transfer element for heating a portion of the oral cavity with waste heat from the apparatus.
32. (Original) The apparatus of claim 1 wherein the apparatus further comprises a light diffuser optically coupled to the radiation emitting element to deliver diffuse radiation to the oral cavity.
33. (Previously Presented) The apparatus of claim 32 wherein the diffuser comprises an optically transmissive element with a partially etched cladding.
34. (Original) The apparatus of claim 1 wherein the body is sized and shaped so as to fit at least partially in a user's mouth and adapted to conform to the shape of at least a portion of the oral cavity.

35. (Original) The apparatus of claim 34 wherein the body is compliant to facilitate conformation to a portion of the oral cavity.

36. (Original) The apparatus of claim 34 wherein apparatus further comprises a body in the form of a mouthpiece adapted for positioning between a user's teeth and gums during phototherapy.

37. (Original) The apparatus of claim 34 wherein the apparatus further comprises a body adapted for placement in a position covering at least a portion of a user's tongue during phototherapy.

38. (Original) The apparatus of claim 1 wherein the body is compliant to facilitate conformation to a portion of the oral cavity.

39. (Currently Amended) The apparatus of claim 1 wherein the apparatus further comprises a body in the form of a mouthpiece adapted for positioning between at least a user's teeth and gums during phototherapy.

40. (Original) The apparatus of claim 1 wherein the apparatus further comprises a body adapted for placement in a position covering at least a portion of a user's tongue during phototherapy.

41. (Original) The apparatus of claim 1 wherein the apparatus further comprises a body adapted for placement in a fixed position relative to the oral cavity during phototherapy.

42. (Previously Presented) The apparatus of claim 1 wherein the apparatus is configured such that, upon disposition of the applicator within the mouth, radiation from the emitter can penetrate the mucosal lining of the oral cavity and deliver phototherapeutic energy to a region of facial tissue.

43. (Original) The apparatus of claim 1 wherein the apparatus further comprises an ultrasound generator for delivering acoustic energy to a target tissue site.

44. (Original) The apparatus of claim 1 wherein the apparatus further comprises a vibrating element for applying intermittent pressure to a target tissue site.

45. (Original) The apparatus of claim 1 wherein the apparatus further comprises a drug delivery port.

46. (Original) The apparatus of claim 1 wherein the apparatus further comprises an energy reflector for redirecting phototherapeutic radiation towards a target tissue site.